

CLAIMS

1. A recording-medium reproduction method for reading, by a pickup, reproduction data stored in a recording medium in units of frames and for reproducing it, comprising:

5 reading the start-position information of the next frame and that of a predetermined frame other than the next frame;

 storing the read start-position information of the frames;

 controlling the pickup according to the read start-position information of the next frame;

 reading the next frame;

 if the next frame can be read, reproducing the reproduction data of the next frame; and

 if the next frame cannot be read, reading a frame other than the next frame according to the stored start-position information of the predetermined frame and reproducing the reproduction data of a frame which can be read.

2. A recording-medium reproduction method according to Claim 1, wherein the start-position information of the predetermined frame is data indicating the reproduction order of VOBUs in a digital video disk.

3. A recording-medium reproduction method according to Claim 1, wherein the start-position information of the predetermined frame is data indicating the reproduction order of cells in a digital video disk.

4. A recording-medium reproduction method according to Claim 1, wherein the start-position information of the predetermined frame is data indicating the reproduction order of PGs in a digital video disk.

5. A recording-medium reproduction method according to Claim 1, wherein the start-position information of the predetermined frame is Next_PGCN in a digital video disk.

6. A recording-medium reproduction method for reading, by a pickup, reproduction data stored in a recording medium in units of frames and for reproducing it, comprising:

reading the start-position information of the next frame and that of a plurality of types of predetermined frames other than the next frame;

storing the read start-position information of the next frame and that of the plurality of types of predetermined frames other than the next frame;

controlling the pickup according to the read start-position information of the next frame;

reading the next frame;

if the next frame can be read, reproducing the reproduction data of the next frame; and

if the next frame cannot be read, reading a frame other than the next frame according to the stored start-position information of the plurality of types of predetermined frames and reproducing the reproduction data of a frame which can be read.

7. A recording-medium reproduction method according to Claim 6, wherein the start-position information of the plurality of types of predetermined frames is data indicating the reproduction order of VOBUs and data indicating the reproduction order of cells in a digital video disk; if the next frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of VOBUs; and if even that frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of cells.

8. A recording-medium reproduction method according to Claim 6, wherein the start-position information of the plurality of types of predetermined frames is data indicating the reproduction order of cells and data indicating the reproduction order of PGs in a digital video disk; if the next frame cannot be read, a frame other than the next frame is read according to the stored data indicating

the reproduction order of cells; and if even that frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of PGs.

9. A recording-medium reproduction method according to Claim 6, wherein the start-position information of the plurality of types of predetermined frames is data indicating the reproduction order of PGs and Next_PGCN in a digital video disk; if the next frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of PGs; and if even that frame cannot be read, a frame other than the next frame is read according to Next_PGCN.

10. A recording-medium reproduction method according to Claim 6, wherein the start-position information of the plurality of types of predetermined frames is data indicating the reproduction order of VOBUs, data indicating the reproduction order of cells, and data indicating the reproduction order of PGs in a digital video disk; if the next frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of VOBUs; if even that frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of cells; and further if even that frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of PGs.

11. A recording-medium reproduction method according to Claim 6, wherein the start-position information of the plurality of types of predetermined frames is data indicating the reproduction order of cells, data indicating the reproduction order of PGs, and Next_PGCN in a digital video disk; if the next frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of cells; if even that frame cannot be read, a frame other than the next frame is read according to the stored data indicating the reproduction order of PGs; and further if even that frame cannot be

read, a frame other than the next frame is read according to the stored
Next_PGCN.

12. A recording-medium reproduction method according to Claim 6,
wherein the start-position information of the plurality of types of predetermined
frames is data indicating the reproduction order of VOBUs, data indicating the
reproduction order of cells, data indicating the reproduction order of PGs, and
Next_PGCN in a digital video disk; if the next frame cannot be read, a frame other
than the next frame is read according to the stored data indicating the reproduction
order of VOBUs; if even that frame cannot be read, a frame other than the next
frame is read according to the stored data indicating the reproduction order of
cells; further if even that frame cannot be read, a frame other than the next frame is
read according to the stored data indicating the reproduction order of PGs; and
furthermore if even that frame cannot be read, a frame other than the next frame is
read according to the stored Next_PGCN.

13. A recording-medium reproduction apparatus for reading, by a
pickup, reproduction data stored in a recording medium in units of frames and for
reproducing it, comprising:

frame-start-position-information reading means for reading the
start-position information of the next frame and that of a predetermined frame
other than the next frame;

a memory for storing the information read by the frame-start-
position-information reading means; and

reproduction control means for controlling the pickup according to
the start-position information of the next frame, read by the frame-start-position-
information reading means, for reading the next frame, for reproducing the
reproduction data of the next frame if the next frame can be read, and for reading a
frame other than the next frame according to the start-position information of the
predetermined frame stored in the memory, and reproducing the reproduction data
of a frame which can be read if the next frame cannot be read.

14. A recording-medium reproduction apparatus according to Claim 13, wherein, as the start-position information of the predetermined frame, data indicating the reproduction order of VOBUs in a digital video disk is used.

15. A recording-medium reproduction apparatus according to Claim 13, wherein, as the start-position information of the predetermined frame, data indicating the reproduction order of cells in a digital video disk is used.

16. A recording-medium reproduction apparatus according to Claim 13, wherein, as the start-position information of the predetermined frame, data indicating the reproduction order of PGs in a digital video disk is used.

17. A recording-medium reproduction apparatus according to Claim 13, wherein, as the start-position information of the predetermined frame, Next_PGCN in a digital video disk is used.

18. A recording-medium reproduction apparatus for reading, by a pickup, reproduction data stored in a recording medium in units of frames and for reproducing it, comprising:

frame-start-position-information reading means for reading the start-position information of the next frame and that of a plurality of types of predetermined frames other than the next frame;

a memory for storing the information read by the frame-start-position-information reading means; and

reproduction control means for controlling the pickup according to the start-position information of the next frame, read by the frame-start-position-information reading means, for reading the next frame, for reproducing the reproduction data of the next frame if the next frame can be read, and for reading a frame other than the next frame according to the start-position information of the plurality of types of predetermined frames, stored in the memory, and reproducing the reproduction data of a frame which can be read if the next frame cannot be read.

19. A recording-medium reproduction apparatus for reading, by a pickup, reproduction data stored in a recording medium in units of frames and for reproducing it, comprising:

5 a frame-start-position-information reading section for reading the start-position information of the next frame and that of a predetermined frame other than the next frame;

a memory for storing the information read by the frame-start-position-information reading section; and

10 a reproduction control section for controlling the pickup according to the start-position information of the next frame, read by the frame-start-position-information reading section, for reading the next frame, for reproducing the reproduction data of the next frame if the next frame can be read, and for reading a frame other than the next frame according to the start-position information of the predetermined frame, stored in the memory, and reproducing the reproduction data of a frame which can be read if the next frame cannot be read.

20. A recording-medium reproduction apparatus for reading, by a pickup, reproduction data stored in a recording medium in units of frames and for reproducing it, comprising:

20 a frame-start-position-information reading section for reading the start-position information of the next frame and that of a plurality of types of predetermined frames other than the next frame;

a memory for storing the information read by the frame-start-position-information reading section; and

25 a reproduction control section for controlling the pickup according to the start-position information of the next frame, read by the frame-start-position-information reading section, for reading the next frame, for reproducing the reproduction data of the next frame if the next frame can be read, and for reading a frame other than the next frame according to the start-position information of the plurality of types of predetermined frames, stored in the

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Figure 1. The effect of the concentration of the *Agrobacterium* strain on the transformation efficiency of *Agrobacterium* strain 101. The concentration of the *Agrobacterium* strain 101 was 10⁶ cells/ml (A), 10⁷ cells/ml (B), 10⁸ cells/ml (C), and 10⁹ cells/ml (D). The concentration of the *Agrobacterium* strain 101 was 10⁶ cells/ml (A), 10⁷ cells/ml (B), 10⁸ cells/ml (C), and 10⁹ cells/ml (D). The concentration of the *Agrobacterium* strain 101 was 10⁶ cells/ml (A), 10⁷ cells/ml (B), 10⁸ cells/ml (C), and 10⁹ cells/ml (D). The concentration of the *Agrobacterium* strain 101 was 10⁶ cells/ml (A), 10⁷ cells/ml (B), 10⁸ cells/ml (C), and 10⁹ cells/ml (D).